

THE WATER OF KANE

In the Hawaiian pantheon, the god Kane is particularly distinguished, for he is the father of living creatures. This ancient Hawaiian *mele* (chant) speaks to the cultural and spiritual importance of water. It is timeless.

*A query, a question, I put to you:
Where is the water of Kane?*

*At the Eastern Gate, Where the Sun
comes in at Haehae;
There is the water of Kane.*

*A question I ask of you:
Where is the water of Kane?*

*Out there with the floating Sun,
Where cloud-forms rest on Ocean's
breast. Uplifting their forms at Nihoa,
This side the base of Lehua;
There is the water of Kane.*

*One question I put to you:
Where is the water of Kane?*

*Yonder on mountain peak, On the
ridges steep, In the valleys deep,
Where the rivers sweep;
There is the water of Kane.*

*This question I ask of you:
Where, pray, is the water of Kane?*

*Yonder, at sea, on the ocean,
In the driving rain, In the heavenly
bow, In the piled-up mist-wraith,
In the blood-red rainfall,
In the ghost-pale cloud-form;
There is the water of Kane.*

*One question I put to you:
Where, where is the water of Kane?*

*Up on high is the water of Kane,
In the heavenly blue, In the black
piled cloud, In the black-black cloud.
In the black-mottled sacred cloud of
the gods;
There is the water of Kane.*

*One question I ask of you:
Where flows the water of Kane?*

*Deep in the ground, in the gushing
spring, In the ducts of Kane and Loa,
A well-spring of water, to quaff,*

*A water of magic power -
The water of life!*

Life! O give us this life!

From Unwritten Literature of Hawaii: The Sacred Songs of the Hula, translated by N. S. Emerson (Washington, D.C. Smithsonian Institution, Bureau of American Ethnology, Government Printing Office. 1909). Photo courtesy of Kent Smith.

Hawaii Statewide Assessment of Forest Conditions and Resource Strategy

June 18, 2010

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Cover Photo: View from Kaala, the tallest point on Oahu looking west over the community of Waianae. For an explanation of the word `aina, please refer to the explanation of the Hawaii state motto on page 16. Photocredit Ron Cannarella.

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Note from Hawaii State Forester Paul Conry

Aloha,

It is my pleasure to invite you to join the Department of Land and Natural Resources, Division of Forestry and Wildlife to help assess the conditions of our forests, native species, forests products industry and forest recreational opportunities and plan our strategy to protect, manage and sustain these resources for current and future generations. The U.S. Secretary of Agriculture, as part of the 2008 Farm Bill, has asked each state and territory to complete a Statewide Forest Assessment and Resource Strategy that will help inform our federal agency partners and national policy makers on where and how to direct natural resource funding and more importantly, help us work together to guide our efforts here in the state to be more collaborative and productive.

The basic requirements of this effort will be to:

- Identify and provide an analysis of present and future forest conditions, trends, and threats on all land ownerships.
- Identify any areas or regions of that state that are a priority.
- Identify any multi-state areas or issues that are a regional priority.
- Incorporate existing forest management plans including state wildlife action plans and community wildfire protection plans.

Every state has the responsibility to deliver a Statewide Forest Resource Assessment and Strategy to the U.S. Secretary of Agriculture by June 2010.

This effort is unique in many ways, it involves all landownership - state, private and federal, and views forests and trees as a whole and not by programs. It will enable the Division to seek and base funding on landscape scale management and not only on narrow program mandates. This initiative offers us an opportunity to plan, and integrate the many programs we work on together under one document. We have an opportunity to demonstrate the value of our forests and trees to the State and nation, and describe our strategy to work together to protect our forests from harm, and conserve forests in a working landscape. Hopefully, this information will be useful to influence our communities, our State and national legislators, and our government leaders to invest in Hawaii's forests for the future.

This document represents the beginning of a process, not the end, where we will work together to continually update and inform our collective understanding of our forest assets and what is affecting them, and apply that knowledge to guide and improve our management. This is our initial assessment and strategy, it will evolve over time, we will need your help to update and improve upon it. Please join us in this effort.

Mahalo for your participation, assistance and support.

Paul J. Conry
Hawaii State Forester

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Acronyms

ACRONYM	MEANING
AAA	Aloha Arborists Association
APHIS	Animal and Plant Health Inspection Service
BISC	Big Island Invasive Species Council (Island of Hawaii)
BRD	Biological Resources Division (of the U.S. Geological Survey USGS)
BWS	Board of Water Supply
C&C	City & County of Government of Hawaii
C&CH	City and County of Honolulu
CAO	Carnegie Airborne Observatory
CAR	Community At Risk (from wildland fire)
CELCP	Coastal Estuarine Land Conservation Program
CERT	Community Emergency Response Training
CGAPS	Coordinating Group on Alien Pest Species
CE	Conservation Education
CPB	Customs and Border Protection (Dept. of Homeland Security)
CFP	Cooperative Fire Protection
CREP	Conservation Reserve Enhancement Program
CWCS	Comprehensive Wildlife Conservation Strategy
CWPP	Community Wildfire Protection Plan
CZM	Coastal Zone Management
DAR	Division of Aquatic Resources
DFWG	Dryland Forest Working Group
DHHL	Department of Hawaiian Homelands
DHS	US Department of Homeland Security
DLNR	Department of Land and Natural Resources
DOA	State of Hawaii Department of Agriculture
DOD	State Department of Defense
DOFAW	Division of Forestry and Wildlife
DOFAW FP	Division of Forestry and Wildlife - Fire Management
DOH	State Department of Health
DOT	State Department of Transportation
DPCH	Department of Planning for County of Hawaii
DPCK	Department of Planning for County of Kauai
DPCM	Department of Planning for County of Maui

ACRONYM	MEANING
EE	Environmental Educational
ELP	Environmental Literacy Plan
EQIP	Environmental Quality Incentive Program (a program of the NRCS)
FAO UN	Food and Agriculture Organization of the United Nation
FEMA	Federal Emergency Management Agency
FGDC	Federal Geodata Data Committee
FH	Forest Health
FHMP	Forest Health Monitoring & Protection
FSP	Forest Stewardship Program (both State & Federal programs)
FLP	Forest Legacy Program
Friends	Friends of Urban Forests
FRPP	Farm & Ranchland Program
FRS	Forest Reserve System
FS	Forest Service
FSCG	Forest Service Competitive Grants
FSP	Forest Stewardship Program
FWS	Fish & Wildlife Service
FWSR	Fish & Wildlife Service - Refuge
GIS	Geographic Information System
GMA	Cooperative Game Management Areas
GTZ	Deutsche Gesellschaft für Technische Zusammenarbeit
HARC	Hawaii Agriculture Research Center
HAWP	Hawaii Association of Watershed Partnerships
HCA	Hawaii Conservation Alliance
HCRI RP	The Hawaii Coral Reef Initiative Research Program
HDOA	Hawaii Department of Agriculture
HEAR	Hawaii Ecosystem At Risk
HETF	Hawaii Experimental Tropical Forest
HFIA	Hawaii Forest Industry Association
HFRA	Healthy Forest Restoration Act
HIGAP	Hawaii Gap Analysis Project
HISC	Hawaii Invasive Species Council
HP-WRA	Hawaii-Pacific Weed Risk Assessment
HTA	Hawaii Tourism Authority

ACRONYM	MEANING
HUD	US Department of Housing and Urban Development
I&E	Information and Education
ICAP	The Center for Island Climate Adaptation and Policy
ICS	Incident Command System
IPIF	Institute of Pacific Island Forestry
ISC	Invasive Species Committee (there are five ISC's operating at an island-level for Kauai, Oahu, Molokai, Maui and the "Big Island" of Hawaii)
KISC	Kauai Invasive Species Committee
LICH	Landscape Industry Council of Hawaii
MAA	Mutual Aid Agreement
MCZAC	Marine & Coastal Zone Advocacy Council
MISC	Maui Invasive Species Committee
MoISC	Molokai Invasive Species Committee
Na Ala Hele	State Na Ala Hele Trails & Access Program
NPS	National Park Service
NAPP	Natural Area Partnership Program
NARF	Natural Area Reserve Fund
NASF	National Association of State Foresters
NGO	Nongovernment Organization
NOAA	National Oceanographic and Atmospheric Administration
NRAG	Natural Resources Advisory Group (to Hawaii Tourism Authority)
NRCS	Natural Resources Conservation Service
OHA	Office of Hawaiian Affairs
OISC	Oahu Invasive Species Committee
ORMP	Ocean Resources Management Plan
OP	Office of Planning
PBIN	Pacific Biodiversity Information Node
PIER	Pacific Island Ecosystems at Risk
PICCC	Pacific Islands Climate Change Cooperative
PIER	Pacific Island Ecosystems at Risk
PR	Pittman-Robertson Funds
PSWRS	Pacific Southwest Research Station
RLA	Recovery Land Acquisition Program
SAF	Society of American Foresters
SCORP	Statewide Comprehensive Outdoor Recreation Plan

ACRONYM	MEANING
SOEST	University of Hawaii School of Ocean and Earth Science and Technology
SOPAC	Secretariat of the Pacific Applied Geoscience Commission
SPC	The Secretariat of the Pacific Community
SPREP	South Pacific Regional Environmental Program
STAC	State Technical Advisory Committee (NRCS)
STDP	Special Technology Development Program
T&E	Threatened and Endangered (species)
TAT	Transient Accommodation Tax administered by HTA
TNC	The Nature Conservancy
TPL	The Trust For Public Lands
UCF	Urban & Community Forestry (Kaulunani)
UH	University of Hawaii
UH/SOEST	University of Hawaii School of Ocean & Earth Science and Technology
UH/CTAHR	University of Hawaii College of Tropical Agriculture and Human Resources
UHHERO	University of Hawaii Economic Research Organization
UNFAO	United Nations Food and Agricultural Organization
USACE	U.S. Army Corps of Engineers
USDA	United States Department of Agriculture
USFS	United States Forest Service
USGS	U.S. Geological Survey
UXO	Unexploded Ordinance
WFLC	Western Forestry Leadership Coalition
WHIP	Wildlife Enhancement Incentive Program
WRA	Weed Risk Assessment
WUI	Wildland-Urban Interface
YCC	Youth Conservation Corps



View of Mauna Kea from Hilo, Island of Hawaii. Fourteen centuries ago the first Polynesians navigated across 2,500 miles of open ocean from their homeland in the Marquesas Islands to settle in the Hawaiian islands, For several hundred years, travel between the two isolated archipelagos was a regular event. Today, the most sophisticated telescopes in the world are located on the summit of Mauna Kea, as seen in this photograph covered in snow. From this vantage point, mankind peers into the farthest reaches of the universe, Were it not for the forests and fresh water of the island, none of these epic accomplishments would have been possible. Photo courtesy of Lesa Moore, Astronomer.

Executive Summary

This is Hawaii's Statewide Assessment of Forest Conditions (2010) and Resource Strategy. It was produced by the Hawaii Department of Land and Natural Resources/Division of Forestry and Wildlife (DOFAW) to fulfill a mandate of the Redesign effort of the State and Private Forestry (S&PF) organization within the U.S. Forest Service. The S&PF Redesign and the requirement to produce this document are part a suite of new provisions added to the Forestry Title of the 2008 Farm Bill (P.L. 110-234).

This document meets the legal requirements set forth by the 2008 Farm Bill and it directly addresses the National Themes of the S&PF Redesign to; (1) conserve working landscapes; (2) protect forests from harm; and (3) enhance public benefits associated with trees and forests. We have addressed all of the related plans, directly engaged all of the committees and worked with our stakeholders as set forth in the Official Checklist.

We have used this process as an opportunity for DOFAW to promote new collaborative efforts among the many agencies, institutions and landowners actively involved in the stewardship of Hawaii's natural resources.

The 2008 Farm Bill in conjunction with the Redesign process for the State and Private Forestry organization of the U.S. Forest Service made it a requirement that each state forestry agency coordinate with the State Forest Stewardship Coordinating Committee, the State Technical Advisory Committee of the Natural Resources Conservation Service, the State Urban Forestry Council, state wildlife agency and applicable federal land management agencies to ensure that their completed Assessment and Strategy addresses the rural-to-urban landscape continuum and identifies opportunities for program coordination and integration.

In addition, the Farm Bill explicitly directed the states to integrate the Comprehensive Wildlife Conservation Strategy (CWCS), and the Statewide Comprehensive Outdoor Recreation Plan (SCORP), all Community Wildfire Protection Plans (CWPP's), and other relevant plans. States were required to involve other key land management and natural resource partners as appropriate to ensure the state's assessment integrates, builds upon and complements other natural resource plans. We accomplished this and more in the process of completing our Assessment and Strategy.

In a series of meetings with our stakeholders we identified 9 issues. For each issue we characterized the trends, the existing conditions, the threats and benefits of our forest and treed landscapes. We created maps with the most current public information available, and then developed a set of strategies for addressing the issues identified in partnership with our stakeholders.

The required deliverable products from this project are the Hawaii Statewide Assessment Forest Conditions and Trends: 2010, and our Resource Strategy for the next 5-10 years. In the process

of completing our project we produced a great variety of products and data that will be of use to others in the future.

The Aloha Act of 1986

Anyone who comes to Hawaii will experience the Aloha Spirit for themselves. It permeates every aspect of life in these islands. Section 5-7.5 of the Hawaii Revised Statutes made the Aloha Spirit the law of the land, and set the standard of conduct for public servants in all three branches of the Hawaii State government. In preparing this document, we fulfilled the requirements of the 2008 Farm Bill and were mindful to conduct ourselves according to the values in our State law.

**THE ALOHA ACT
HAWAII REVISED STATUTES § 5-7.5**

§ 5-7.5 "**Aloha Spirit**". (a) "**Aloha Spirit**" is the coordination of mind and heart within each person. It brings each person to the self. Each person must think and emote good feelings to others. In the contemplation and presence of the life force, "**Aloha**", the following **unuhi laulā loa** may be used:

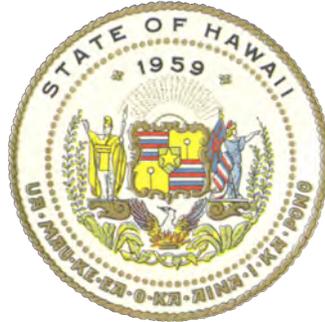
- "**Akahai**", meaning kindness to be expressed with tenderness;
- "**Lōkahi**", meaning unity, to be expressed with harmony;
- "**Olu'olu**" meaning agreeable, to be expressed with pleasantness;
- "**Ha'aha'a**", meaning humility, to be expressed with modesty;
- "**Ahonui**", meaning patience, to be expressed with perseverance.

These are traits of character that express the charm, warmth and sincerity of Hawaii's people. It was the working philosophy of native Hawaiians and was presented as a gift to the people of Hawai'i. "**Aloha**" is more than a word of greeting or farewell or a salutation. "**Aloha**" means mutual regard and affection and extends warmth in caring with no obligation in return. "**Aloha**" is the essence of relationships in which each person is important to every other person for collective existence. "**Aloha**" means to hear what is not said, to see what cannot be seen and to know the unknowable.

(b) In exercising their power on behalf of the people and in fulfillment of their responsibilities, obligations and service to the people, the legislature, governor, lieutenant governor, executive officers of each department, the chief justice, associate justices, and judges of the appellate, circuit, and district courts may contemplate and reside with the life force and give consideration to the "**Aloha Spirit**". [L 1986, c 202, § 1]

Perhaps the most valuable and enduring legacy of this project will be the sum of the new relationships we have established, the enhanced capabilities of our staff to use new tools and data, and the educational experiences of our interns. We have renewed our commitment to the cultural values and land stewardship ethic that we have inherited from the native Hawaiians; the passing of knowledge from one generation to the next, a deep respect for the *aina* (the land that sustains us), the *aloha* spirit that binds us as a community, and a commitment to doing our part as responsible stewards of the 21st century *ahupuaa*. All of these concepts are discussed at length throughout this document.

The Hawaii State Motto and Land Stewardship
Ua Mau Ke Ea, O Ka Aina I Ka Pono
"The life of the land is perpetuated in righteousness"



This Hawaiian language maxim was designated as the official State motto soon after Hawaii became a U.S. state in 1959. The official English translation is "The life of the land is perpetuated in righteousness", but there is a much deeper meaning to our State motto. These words were first spoken by King Kamehameha III on July 31, 1843 in a speech of gratitude on the day that sovereignty was restored to the Kingdom of Hawaii by British Navy Admiral Richard Thomas. Months earlier, the Captain of another British warship had unilaterally seized control of Hawaii and claimed it as a territory of Great Britain. Upon hearing this news Queen Victoria was outraged and directed Admiral Thomas to restore sovereignty of the Kingdom of Hawaii. In his speech of gratitude, the King proclaimed "*Ua mau ke ea o ka 'aina i ka pono*", meaning that the Kingdom's 'aina (land), was once again *ea* (independent) *ua mau*" (steadfast, solid, forever), *i ka pono* (through righteousness, justice, or virtue).

The Hawaiian language is rich and poetic. Every chant and proverb has hidden within it double or triple entendre, or *kauna*. The King chose his words carefully; there are dozens of words he could have chosen for "land", but he chose the word 'aina for that word has a special connotation. The root of the word 'aina is 'ai, (to feed), thus, the 'aina is a term of endearment for the land that feeds and sustains us. The word *pono* is also significant, for it carries a connotation of doing the right thing, doing what is fair or just. Today, many residents of Hawaii, be they native Hawaiian or not, often use the words 'aina and *pono* in every day speech because there simply isn't a word in English that means just that.

So a less formal, but more meaningful translation of the King's words into English might be: "Our independence will forever be sustained by our precious life-giving land if we do what is good and just." At the Division of Forestry and Wildlife, we do not simply hang this motto on the wall; in cooperation with our partners and volunteers we strive every day to do the right thing, to assure that the land is cared for and preserved into perpetuity.

Notes on Orthography and Language

Note: Words and place names in the Hawaiian language are in italics throughout this document.

Hawaii is unique for many reasons. It is the only state with two official languages, Hawaiian and English. Regrettably, the use of the Hawaiian language has been nearly lost over the last 100 years and English has become the dominant language of government, education, mass media and general use.

Today, there is a renewed interest in reviving and expanding the use of the Hawaiian language and reaffirming the values of the native Hawaiian culture and language in everyday life. In 1978, Hawaiian was reestablished as an official language of the State of Hawaii and, in 1990, the Federal Government of the United States adopted a policy to recognize the right of Hawaii to preserve, use, and support its indigenous language. To this end, Hawaiian language and culture are being taught in Hawaiian immersion schools, Hawaiian language broadcasts on public television and radio, and in continuing education programs developed by the Hawaii Department of Education.

The State of Hawaii, and the authors of this document recognize that proper pronunciation and spelling of Hawaiian is a requirement to properly and respectfully represent the words used in place names, cultural ideas, and the names of our native plants and animals, and physical attributes of our unique geography.

The information contained in this document will likely be used in many different media such as a printed report, word processing documents in several formats, the Internet, and PowerPoint presentations to name a few. Unfortunately, current computer-based word processing applications, keyboard layouts, and web browser technology do not facilitate universal and uniform representation of these diacritical marks by browser fonts, word processors, presentation applications and search engines. Our experience is that the *kahako* and the *okina* are often mistranslated to random characters thus rendering the intended Hawaiian word unintelligible or unreadable. For this reason we have italicized words in Hawaiian to inform the reader that they are Hawaiian, and that, without the *kahako* and *okina*, they may be technically misspelled.

The authors of this document share the aspirations of native Hawaiian speakers to one day restore the use of spoken and written Hawaiian language to its former status as a primary language spoken in these Hawaiian Islands. At this time however, we do not have the resources to produce this document in both English and Hawaiian, and the state of technology does not guarantee that unique Hawaiian orthography will be correctly represented to the person reading this document.

Background

Purpose of This Document

The Hawaii Statewide Forest Resource Assessment was initiated in response to a mandate from the U.S. Forest Service (USFS) and contained in the Forestry Title of the 2008 Farm Bill (P.L. 110-234). The assessment was developed in a collaborative style by the staff of the Hawaii Department of Land and Natural Resources/Division of Forestry and Wildlife (DOFAW) with the assistance of our partners and stakeholders in accordance with national direction issued jointly by the USFS and the National Association of State Foresters (NASF).

Statewide assessments are a key component of the USFS State and Private Forestry (S&PF) Redesign Initiative that was launched in 2008. These assessments will provide a science-based foundation to assist state forestry agencies and their partners in: 1) identifying the areas of greatest need and opportunity for forests across their states; and 2) developing a subsequent long-term strategy to address them.

By encouraging states to collaboratively work with their partners in the identification and address of priorities, the U.S. Congress and the USFS hope to ensure that S&PF funds are invested in those areas where funding will make the most significant difference for both the state and the nation.

In Hawaii, DOFAW and our partners will also use the state assessment and the associated GIS data layers as tools to identify where opportunities exist to facilitate forest management across jurisdictional boundaries and quantify the full scale of actions and resources needed to address Hawaii's forest health challenges.

USDA Forest Service State and Private Forestry Redesign Initiative

The S&PF branch of the U.S. Forest Service provides technical assistance and cost-share funding to every state in the nation in support of issues related to wildland fire, insects and disease, private forest stewardship and community forestry on nonfederal land. In Hawaii, this funding is received and distributed primarily by DOFAW.



The S&PF Redesign Initiative was conceived by state and federal partners in response to increasing pressures on our nation's forests and decreasing availability of resources and funds. In the face of these challenges, the USFS and state foresters determined that more progressive, large-scale strategies were needed to sustain our nation's forest resources.

The purpose of the redesign initiative is “to shape and influence forest land use on a scale and in a way that optimizes public benefits from trees and forests for both current and future generations.” In designing the initiative, state foresters worked closely with the USFS to:

- Examine current conditions and trends affecting forest lands.
- Review existing S&PF programs to determine how best to address threats to forests on a meaningful scale.
- Develop a strategy to deliver a relevant and focused set of S&PF programs and opportunities.

National Objectives

The new redesign approach focuses on three consensus-based national themes with accompanying strategic outcomes:¹

1. Conserve working forest landscapes

- 1.1. Identify and conserve high-priority forest ecosystems and landscapes.
- 1.2. Actively and sustainably manage forests.

2. Protect forests from harm

- 2.1. Restore fire-adapted lands and reduce risk of wildfire impacts.
- 2.2. Identify, manage and reduce threats to forest and ecosystem health.

3. Enhance public benefits from trees and forests

- 3.1. Protect and enhance water quality and quantity.
- 3.2. Improve air quality and conserve energy.
- 3.3. Assist communities in planning for and reducing wildfire risks.
- 3.4. Maintain and enhance the economic benefits and values of trees and forests.
- 3.5. Protect, conserve and enhance wildlife and fish habitat.
- 3.6. Connect people to trees and forests.
- 3.7. Manage and restore trees and forests to mitigate and adapt to global climate change.

Since 2008, a portion of S&PF funding has been, and will continue to be, allocated through a competitive process guided by these national themes. To ensure that proposals for this funding are being focused on high-priority areas with the greatest opportunity to achieve meaningful outcomes, each state or territory that wants to receive S&PF funding must work in collaboration with the USFS and other key partners to develop the following documents:

Statewide Assessment of Forest Conditions – Provides an analysis of forest conditions and trends in the state, and delineates priority rural and urban forest landscape areas.

Statewide Forest Resource Strategy – Provides long-term strategies for investing state, federal and other resources to manage priority landscapes identified in the assessment, focusing on areas in which federal investment can most effectively stimulate or leverage desired actions and engage multiple partners.

States that receive S&PF funds also will be asked to submit an annual report that describes how such funds were used to address the opportunities identified in the assessment and strategy, including the leveraging of funding and resources through partnerships.

According to the 2008 Farm Bill, each state is required to complete both the assessment and strategy by June 18, 2010, in order to qualify for most S&PF funds. This document represents Hawaii's completion of these requirements.

National Guidance for Statewide Forest Resource Assessments

The development of a comprehensive statewide assessment of forest resources provides a valuable and unique opportunity to highlight the full scale of work needed to address priorities in the forests of each state and potentially across multiple states. At a minimum, each statewide assessment must:

- Describe forest conditions and threats on all ownerships in the state.
- Identify forest-related benefits and services consistent with the national themes.
- Delineate priority forest landscapes or otherwise identify issues and opportunities that will emphasize and address the Statewide Forest Resource Strategy.
- Identify any multi-state areas that are a regional priority.
- Incorporate existing statewide plans as appropriate.

The national guidance recommends that states base their assessments on publicly available geospatial data, but it allows states to use a combination of qualitative, quantitative and geospatial sources to provide information relevant to key state issues and national themes. In addition, non-geospatial information can be used in combination with geospatial data to identify priorities. States may identify separate priority areas for different programs and issues.

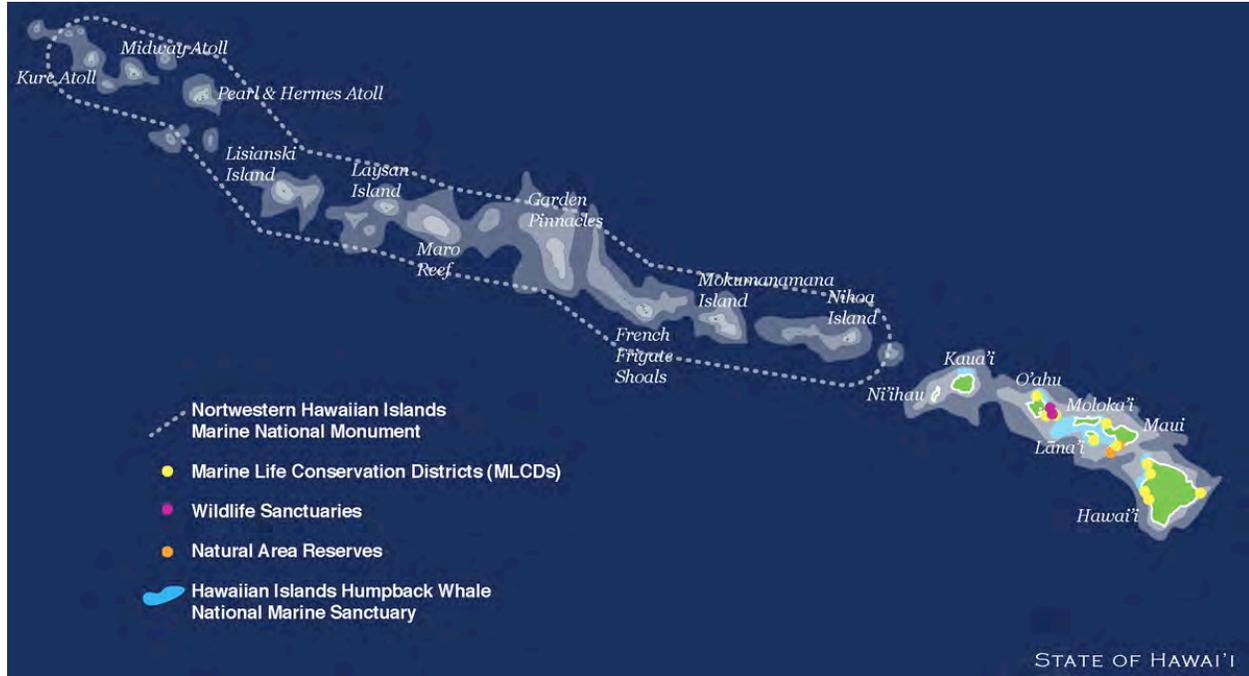
In developing a statewide assessment, each state forestry agency is directed to coordinate with the State Forest Stewardship Coordinating Committee, State Technical Advisory Committee, the State Urban Forestry Council, state wildlife agency and applicable federal land management agencies to ensure that the assessment addresses the rural-to-urban landscape continuum and identifies opportunities for program coordination and integration. State forestry agencies also are asked to involve other key land management and natural resource partners as appropriate to ensure the state's assessment integrates, builds upon and complements other natural resource plans.

Process for Development of Hawaii's Statewide Assessment

Scope

The State of Hawaii consists of two distinctly different geographical regions; the Main Hawaiian Islands and the Northwestern Hawaiian Islands. (Please refer to the following section "Hawaii's

Forests: The Historical Context for more detail.) The Northwestern Hawaiian Islands do not support forests, and are now managed as the Papahānaumokuākea Marine National Monument. This assessment therefore pertains only to the forested Main Hawaiian Islands from Niihau to the Island of Hawaii as shown in Map A.1.



Map A.1. The State of Hawaii showing the Main Hawaiian Islands which is addressed in this Assessment, and the Northwestern Hawaiian Islands which are not included since they do not

The reader should be familiar with several characteristics that are unique to the State of Hawaii in order to fully grasp some of the issues in this document. See Table 1.1 for an explanation of the difference between an island name and a county name.

1. When referring to people, the term “Hawaiian” is reserved for people of native Hawaiian descent. Residents of the state of Hawaii are referred to as “residents” or “locals”, and may or may not be of native Hawaiian ancestry.
2. The state of Hawaii does not have a municipal-level of government. The state of Hawaii has a governor, and the Main Hawaiian Islands are divided into 4 counties, each with a county council and a mayor who is elected by popular vote. Each inhabited island has a County Seat, but these are not incorporated. Because Hawaii does not have municipalities with defined boundaries, the Kaulunani Urban and Community Forestry Program faced the challenge of mapping their priority areas. Please refer Table 1 which clarifies the relationship between the island name, county name, named communities and county seats.

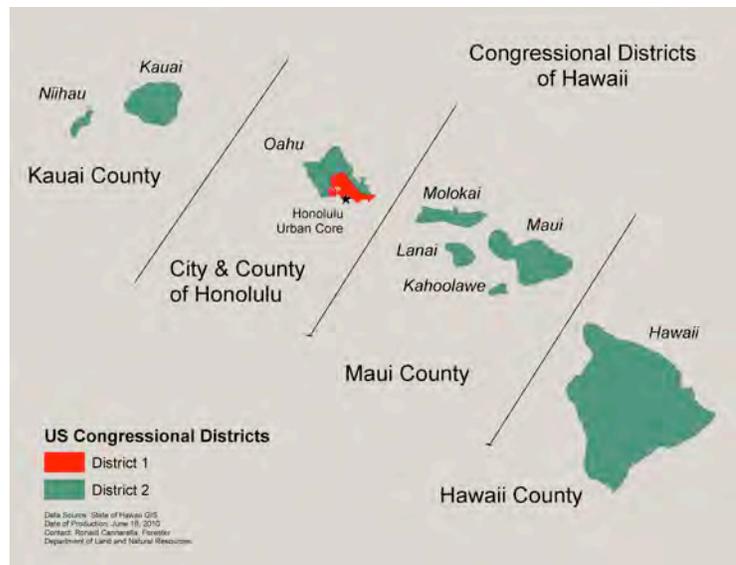
County Name	Islands Comprising the County and their County Seat
County of Hawaii	Hawaii (Hilo)
County of Maui	Maui (Wailuku), Lanai (Lanai City), Molokai (Kaunakakai), Kahoolawe (uninhabited). Legally, a 5 th County exists on the Island of Molokai named Kalawao which was formerly the leper colony of Kalaupapa, established by Saint Damien of Molokai to care for native Hawaiians with Hansen’s Disease (leprosy). The original Kalaupapa settlement is now managed by the National Park Service as The Kalawao National Historical Park. As of the census of 2000 there were 147 residents with Hansen’s disease still living at Kalaupapa.
City & County of Honolulu	Entire island of Oahu (“Honolulu” generally refers to the Honolulu Urban Core between Kalihi Valley and Kahala)
County of Kauai	Kauai (Lihue), and Niihau (privately owned)

Table 1.1: The relationship between County names, island names and population centers for the islands addressed by this document.

3. The entire island of Oahu comprises the City & County of Honolulu. The terms Oahu, Honolulu, and City & County of Honolulu are used interchangeably throughout this document. Generally speaking, “Honolulu” refers to the Urban Core on the south side of the island. Much of the island of Oahu is very rural and these areas are distinctly different from the Urban Core. Again, “cities” on the island of Oahu, such as Kaneohe, Kailua, Wahiawa are not incorporated.

4. Two of the Main Hawaiian Islands are entirely privately owned; the island of Niihau and the island of Lanai. Niihau is populated entirely by native Hawaiians whose principle language is Hawaiian. Access to Niihau is strictly controlled by the landowner, and there is very little interaction between the government and Niihau.

5. 80% of the state’s population lives on the Island of Oahu, with the greatest concentration in the



Map A.2. Congressional Districts of Hawaii reflect the population concentrated in the Honolulu Urban Core.

Honolulu Urban Core. This population distribution is clearly reflected in the district boundaries for Hawaii's two U.S. Congressional Districts. (see Map A.2)

Hawaii's Issues for this Assessment and Strategy

The states were given a good deal of leeway in how they identified relevant issues. For Hawaii, we identified nine priority issues, listed below, using several questionnaires, on-line surveys and in collaboration with our partners. (*See Appendix A: Stakeholder Involvement for additional information on this process.*) The overall process for producing this document was coordinated by Ronald Cannarella our staff Resource Planner and GIS specialist. Our staff program managers developed the initial assessment, trends, threats and strategies for issues relevant to their programs, and then all issues were reviewed by staff and our cooperators before incorporating them into the final document.

Hawaii's Priority Issues are:

- Issue 1: Water Quality & Quantity
- Issue 2: Forest Health: Invasive Species, Insects & Disease
- Issue 3: Wildfire
- Issue 4: Urban & Community Forestry
- Issue 5: Climate Change/Sea Level Rise
- Issue 6: Conservation of Native Biodiversity
- Issue 7: Hunting, Nature-Based Recreation and Tourism
- Issue 8: Forest Products & Carbon Sequestration
- Issue 9: Multi-State Issues

At the time we were preparing this document, our state began to experience the economic crisis that has affected so many other states. Declining revenues required that the State implement a number of cost saving measures that included a reduction in workforce, the implementation of a furlough system that reduced working hours by approximately 14%, and a general restriction on spending. As an island state, the only method of transportation between the islands is by air, and for most of this project inter-island travel was limited.

In order to complete the project, we found new ways to collaborate. We took advantage of every opportunity we could to get our project on the agenda for meetings and conferences that were already scheduled. In every case, our partners were glad to assist and in the process we developed new relationships between agencies and organizations that had not previously worked together. Notably among these conferences was the 2009 Hawaii Conservation Conference produced by the Hawaii Conservation Alliance, the Urban and Community Forestry Summit produced by the Kaulunani Urban and Community Forestry Committee, the Watershed Prioritization Summit produced by the Coastal Zone Management Program and the Hawaii Office of Planning, and the California/Nevada/Hawaii (CNH) annual Wildfire conference which was held on the island of Kauai in 2010.

In order to overcome the barrier of working on different islands, and to hold down our costs, we utilized the internet as much as possible, and adopted new technologies such as Google Docs, Dropbox, Basecamp and set up a website so that we could communicate at minimal cost, and often in real-time. Thus, it is difficult to document many of the formal “meetings” with our stakeholders, since in many instances several people on different islands would be collaborating on a document in real time. We held conference calls on a daily basis, and recorded the entire 2009 Hawaii Conservation Conference which focused on Climate Change. Presentations from this conference are posted on the web at <http://hcc09.blip.tv>, and can also be downloaded as podcasts from iTunes at <http://itunes.apple.com/us/podcast/hawaii-conservation-conference/id329377708>. Producing these podcasts took three days, and they are hosted for free.

We also utilized in-house student interns, partnered with several University of Hawaii professors who provided students the opportunity to assist us in the production of this document as part of their class requirements. We utilized Americorps interns at critical points in the project.

We were very fortunate that while we were working on this project, LANDFIRE was just beginning its work in Hawaii. DOFAW staff and many of our cooperators worked closely with LANDFIRE staff specifically with the intent of making their data products directly relevant to this Assessment. The Hawaii Nature Conservancy provided invaluable assistance by applying for a grant from LANDFIRE to help us refine our biodiversity layer, and they continued to provide support long after the deliverables were provided to LANDFIRE.

In order to evaluate the enormous amount of historical data and other relevant plans, we scanned and converted over 10,000 pages of original source material to Adobe’s Portable Document Format (PDF). This allowed us to quickly search an enormous amount of information, and we are in the process of identifying a permanent repository for these scanned documents.

In doing the GIS analysis for the various issues we utilized publicly available data. In some cases, we utilized raster-based overlay analysis as we did in the Spatial Analysis Project, but many of our issues did not lend themselves to that particular technique. In the course of our analysis we identified a number of public layers that were out of date, and where possible we updated these layers and provided Federal Geodata Data Committee (FGDC) compliant metadata. These layers were then provided to the State of Hawaii Office of Planning and posted for public access via their website.

Two professional peer-reviewed papers have been produced and a chapter in a forthcoming book on Technical Writing will feature our collaboration with the University of Hawaii English Department.

Perhaps most importantly, this project has helped bring together the three basic constituencies that comprise the the 21st Century *Ahupuaa*¹; the upland forested areas, the developed areas, and the coastal/marine areas. Our existing relationships are strengthened, new partnerships have been developed, and all parties are ready to play their part in managing their portion of the *ahupuaa*.